5 December 1957

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Report to AD/CR by [redacted] at the 3 December 1957 Staff Meeting

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I attended the Records Mechanization Course from 12-22 November 1957. It was conducted by [redacted], Assistant Executive Officer, DD/P and Chief of the [redacted] Unit.

The purpose of the course was to indoctrinate representatives of the DD/P operating divisions and branches of the need to change present procedures in order to mechanize the records system and also to have these representatives act as consultants to the IBM engineers who have been engaged to make a study of the work flow, time and volume requirements, and document reproduction needs for use in developing equipment to do this job.

The course covered the following general subjects:

1. The present state of the RI files and what must be done now.
2. Presentation of the fundamentals of computer systems and description of various types of computers and data processing machines.
3. Presentation of a possible system for RI.
4. Discussion of uses of a mechanical system and policy changes required for this.

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1. The present state of RI files and what must be done now. 25X1X4A

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agencies, the DD/P have decided to seek solutions in three directions simultaneously:

a. Improve and standardize records procedure.

b. Search for means to mechanize the records.

c. Pending mechanization, to process materials so they can be converted automatically to machine use. FOIAb3b

About four months ago, [redacted] Chief, SE Division, was temporarily assigned the job of cleaning out the files, getting rid of backlogs and working out procedures to screen out unimportant material before it gets into the system. He estimates that only 1/4 of the present 1 million documents per year need be indexed and filed in RI to accomplish the DD/P operational missions and cover inter-agency responsibilities. This would reduce the work load in RI from 20,000 to 5,000 documents per week.

Screening would be done to a great extent by the originators of documents in the field by indicating those to be indexed; the area desks would determine which other documents and all cables coming to their attention were to be indexed based on their evaluations of the information; no administrative material would be indexed; there would be no more mass acquisitions without stringent screening.

2. Fundamentals of computer systems and description of computers and data processing machines.

This phase of the course was technical and I will not attempt to describe how computers or document processing machines work or the relative merits of each. I can say that I was completely conditioned

to the ability of these machines to handle data with terrific speed and that letters can be converted to digits which in turn can be stored on magnetic media. The main point, I believe the IBM engineers wanted to get over in describing the various types of machines was that a machine suitable for a large volume information index or document file must be able to go directly to the specific data asked for rather than to serially search through all the data until it identifies that desired. The "Random Access" principle therefore, is the important point here.

3. Presentation of a system for RI.

The IBM program for mechanizing the RI records must solve the following equipment requirements:

a. Storage of document images and coded information.

b. Index capacity of at least a billion digits and document capacity of at least 5 million items with means of expansion.

c. Retrieval, reproduction and refiling of documents at the rate of 1 every 3 seconds of the working day.

d. Retention of the record within the file equipment at all times.

e. Facilities for correction, updating and purging of index.

f. Facilities for automatic file consolidation.

g. Facilities for controlling sensitive information.

The system under consideration contemplates an index stored in random access computer machines and a document file stored on film in a random access photo memory machine.

The main index of names; referenced to individual documents (or other indexes) would be stored in a SCRAM machine. This is a strip bin file in which 3 foot long steel tapes are stored 10 to a bin in several bins arranged sort of like wagon wheels one on top of the other with the spokes representing the bins. The indexed information is recorded on the steel tapes magnetically and the IBM engineers estimate the machine would have a 100 million character capacity which would be enough for the main index.

The subsidiary indexes to the 201 consolidated files, the subject files and the cross-reference file would be put on the commercial RAMAC computers which are disk-type magnetic storage units.

The document file would be stored in an IBM machine being developed at San Jose, California called the DAP - Direct Access Photomemory - this machine stores document images on strips of Chalkley film in vertical bins (several strips in each bin) and several bins in each cell. The machine can in 1 second locate the proper bin and snatch out the proper strip of film and reproduce the desired image on silver film which in turn can be used to make a paper copy or be sent to the requester. They tell me this machine could adequately store images of all the documents needed in RI files (about 5 million). The interesting development used by this machine is the Chalkley emulsion film which is directly printed out by exposure to ultra violet light; no developing is required.

The IBM proposes that documents when received from the field will be sorted immediately and those indicated for indexing by the field will be first microfilmed and then sent to the action addressee. Cables and other documents considered necessary for the central record would be sent by the area desks for microfilming. The microfilm would be developed every hour or so and then passed to the photo memory machine for reproduction into it. Each image inserted would be immediately reproduced on silver film which would be developed and paper copies made. The paper copies would be sent to the index section where "flex" tapes or IBM cards would be prepared for use in entering the "indexed" information into the SCRAM. The IBM engineers believe it essential for the indexers to use reproduced copies of the images stored in the photo memory to automatically check that the image is satisfactory.

I have no doubts about the potentialities of the machines, but the specific procedures for handling the documents in the processing system as well as the search requests will have to be carefully worked out to prevent the build-up of backlogs at the various stages.

4. Discussion of uses of mechanical system and policy changes required.

RI presently has 60 people engaged in checking and answering name check requests received from other government agencies - mainly from FBI and Passport Division of State Department. Of the 3-4 thousand requests received each week the files contain no information in about 95% of the cases. It is possible for the FBI to prepare their requests on IBM cards which could be inserted in the SCRAM index machine and have the answer printed out automatically on the card. For 95% of the cases the cards which said "NO INFO" could be sent back to the FBI. It is conceivable that the query could be typed on a machine at FBI which could be connected by direct wire to the SCRAM and the reply could be immediately transmitted back - if the answer weren't negative, the responding transmission could be programmed to indicate "reply following by memo".

The important decisions which must be made about the system are:

a. Will english transliterations only be used for indexing?

b. Should the requesters screen the indexed references, or should such references be automatically furnished on film or in hard copy to the requesters? There is a question here of releasing sensitive and highly classified material which is controlled by specific desks.

c. What subjects should be covered in the subject index?

d. Documents must be screened out by either the requesters, the desk analysts, or both.

e. Documents and cables must be microfilmed and indexed as soon as possible after receipt to keep information currently.

f. When and who will be responsible for consolidating the "201 files?"

g. Desk analysts must indicate corrections to index and purging of files.

Conclusion

The RI processing system is not concerned with the initial dissemination of copies of documents received because there is normally only 1 action office and this office may indicate who else if anyone should receive a copy.

It is my opinion that the RI problem of an index and a document file is quite similar to the OCR intellofax and register problem. It appears to me that the mechanization of their files as well as ours should be accomplished with the same type of machines. Whether it should be SCRAM and DAP or Minicard depends on a comparison of the technical capabilities - but it seems inefficient for CIA to have two different mechanical systems to perform what are essentially similar functions.